Appendix F
BMP Selection Process for Construction Projects

In planning a construction project, the developer/contractor must answer three key questions with respect to storm water quality control: (1) what kind of water quality controls are needed?; (2) where should the controls be implemented?; and (3) how much control is enough? In order to answer these questions, the developer/contractor should use a documentable, defensible process to identify potential water quality problems, develop design objectives, formulate and evaluate alternatives, select the most appropriate alternatives, and design the plan. A suggested BMP selection process particularly applicable to Construction Projects one acre and greater and projects subject to the California General Permit for Storm Water Discharges Associated with Construction Activity is described herein.

F.1 DEVELOP GOALS AND OBJECTIVES

Site-specific conditions of Development Construction Projects determine which BMPs are most applicable for a site. The BMPs selected for a site should fulfill the following goals and objectives:

- Be appropriate for the given site constraints
- Have a beneficial or neutral impact on the environment
- Provide moderate to high pollutant source control and/or removal capability
- Meet regulatory requirements
- Minimize changes in hydrological conditions
- Be cost effective.

F.2 BMP SELECTION CRITERIA

In order to fulfill the above goals and objectives, BMPs should be selected by using appropriate selection criteria that serve to identify the capabilities and limitations of each BMP. Criteria to be considered in screening and selecting BMPs for the construction stage are:

- Site factors (e.g., slope, high water table, soils, potential risks below or downstream of site, etc.)
- Project Characteristics (e.g. type, size, and duration of project)
- Pollutant avoidance (source control) or removal capability (effectiveness)
- Cost of implementation
- Environmental compatibility

These criteria may be given equal weight during the BMP selection process, or they may be weighted differentially, depending on the relative importance of each factor for the particular project.

Several general principals that should be considered in selecting erosion and sediment control BMPs include:

- Prevention of pollutant release is superior to pollutant capture later. Select source control BMPs as a first step.
- Selection of BMPs must depend on site characteristics and the construction plan.
- The proper first step is a site drainage analysis. Determine where runoff will enter, cross and exit the site.
- Divert runoff from exposed areas wherever possible.
- Existing vegetation is the most effective erosion control.
- Limit and phase clearing.
- Incorporate natural drainage features whenever possible, using adequate buffers and protecting areas where flow enters the drainage system.
- Minimize slope length and steepness.
- Keep runoff velocities low.
- Reduce the tracking of sediment off-site.
- Select and install controls that can be maintained.

F.3 NOMINATE AND EVALUATE ALTERNATIVES

A number of BMPs applicable to Development Construction Projects have been identified in Section 2.4 of this Program. The BMPs were nominated from the *California Storm Water Best Management Practices Handbooks*. Other BMPs from other manuals and sources were also considered.

F.4 SELECT BEST ALTERNATIVES

Based on the list of recommended BMPs for Development Construction Projects provided in this Model Program, the developer/contractor should use the selection criteria described above to select the best alternatives for the project conditions, characteristics, and concerns. This may be done numerically, by weighting the selection criteria, rating each BMP against each criteria, and

summing up a weighted rating for each BMP, which then becomes a relative ranking. Or the selection process may be done in a more subjective, non-numerical way using experience and professional judgment to select the best alternative BMPs. Either way, the developer/contractor should document the selection process and provide support for the selected system of controls.

F.5 DESIGN, IMPLEMENT, AND MAINTAIN THE BMPs

After the appropriate BMPs are selected for a given project, the developer/contractor should document those selected on the standard checklist and show the selected BMPs on the plans, as discussed in Section 3 of this document. It is important that the control measures be properly installed and maintained. Improper installation and poor maintenance are the most common reasons for storm water controls to not function as designed. Therefore, it is incumbent on the designer to provide sufficient information in the project plans and specifications for their proper installation, and to provide adequate guidance on their proper maintenance so that the installation and maintenance procedures may be incorporated into the state SWPPP, Local SWPPP, or WWECP.